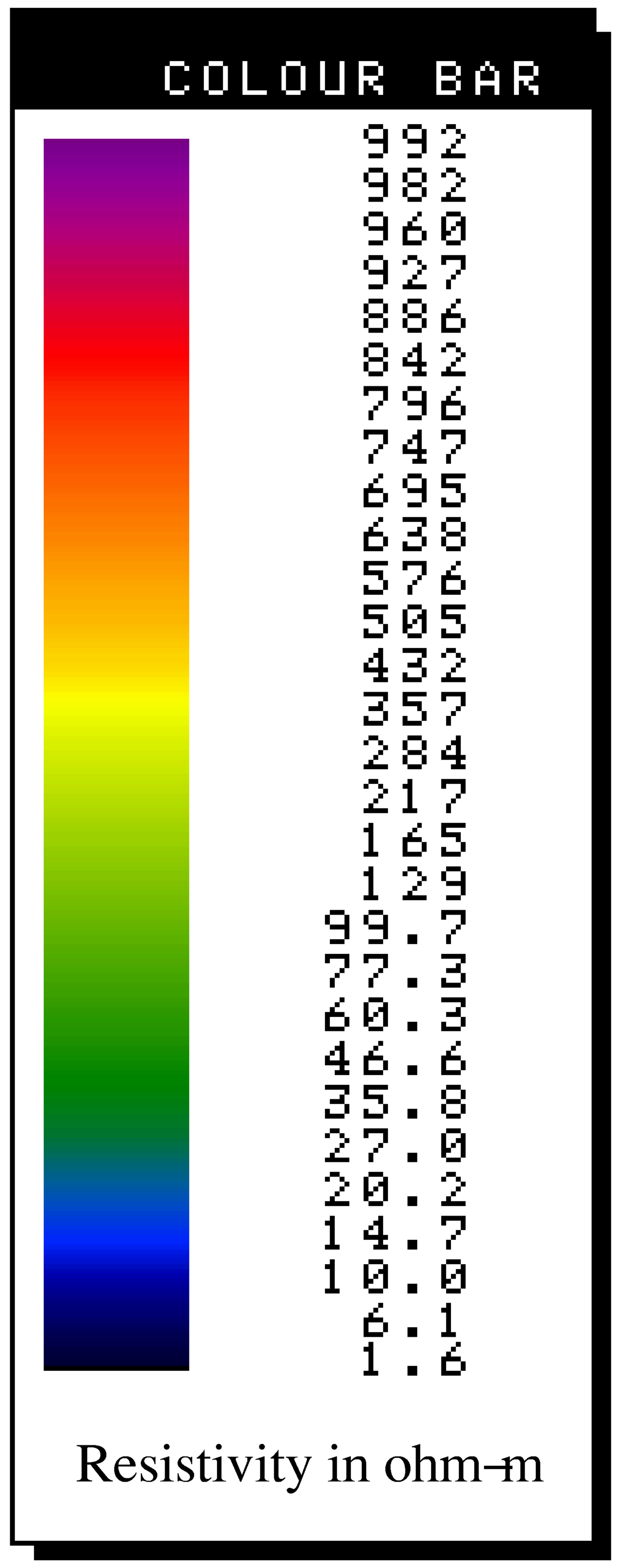
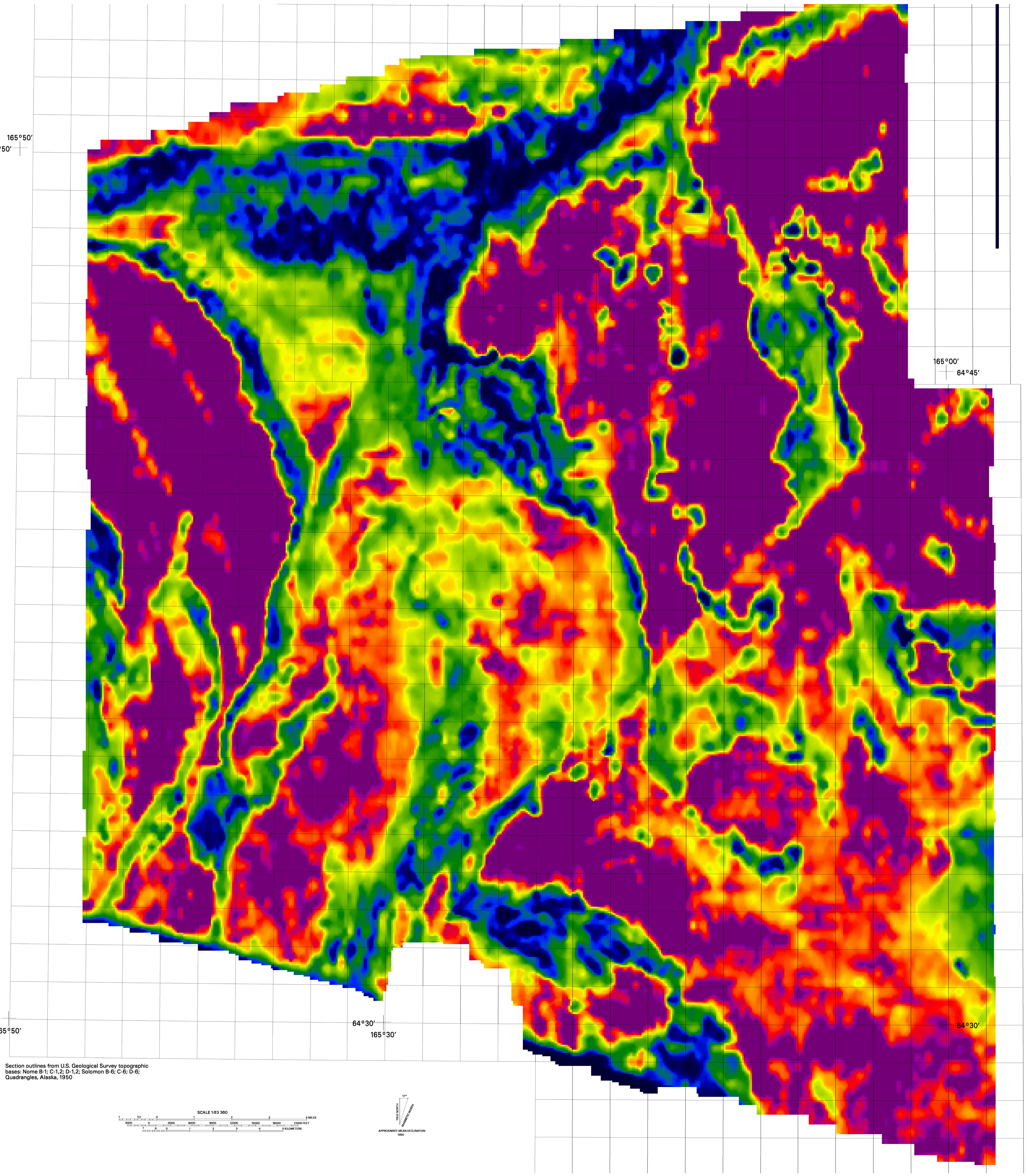
ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

REPORT OF INVESTIGATIONS 94-13





Section outlines from U.S. Geological Survey topographic bases: Nome B-1; C-1,2; D-1,2; Solomon B-6; C-6; D-6; Quadrangles, Alaska, 1950

SCALE 1:63 360

1 1/2 0 1 2 3 4 MILES

3000 0 3000 6000 9000 12000 15000 18000 21000 FEET

1 .5 0 1 2 3 4 5 KILOMETERS

17° TRUE NORTH MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION 1950

DESCRIPTIVE NOTES

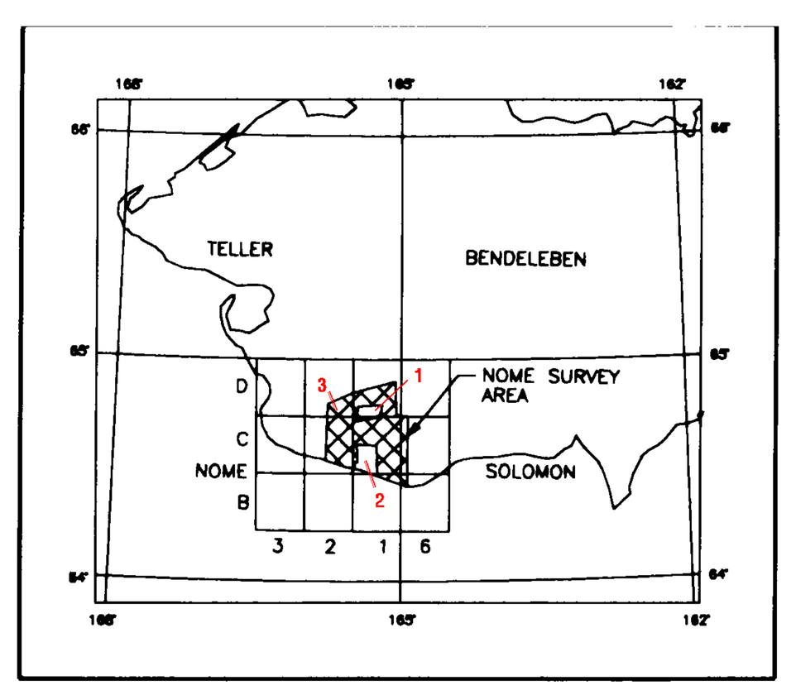
Geophysical data were acquired with a DIGHEM Electromagnetic (EM) system, a Scintrex cesium CS2 magnetometer, and a Herz VLF system installed in an AS350B-1 Squirrel helicopter. In addition, the survey recorded data from a radar altimeter, GPS navigation system, 50/60 Hz monitors, and video camera. Flights were performed at a mean terrain clearance of 200 feet along survey flight lines with a spacing of a quarter of a mile. Tie lines were flown perpendicular to the flight lines at intervals of approximately three miles.

A Sercel Real-Time Differential Global Positioning System (RT-DGPS) was used for both navigation and flight path recovery. The helicopter position was derived every 0.5 seconds using both real-time and post-processing differential positioning to a relative accuracy of less than 10 m. Flight path positions were projected onto the Clarke 1866 (UTM) spheroid, 1927 North American datum using a Central Meridian (CM) of 166 degrees, a north constant of 0 and an east constant of 500,000. Positional accuracy of the presented data is better than 10 m with respect to the UTM grid.

ELECTROMAGNETICS

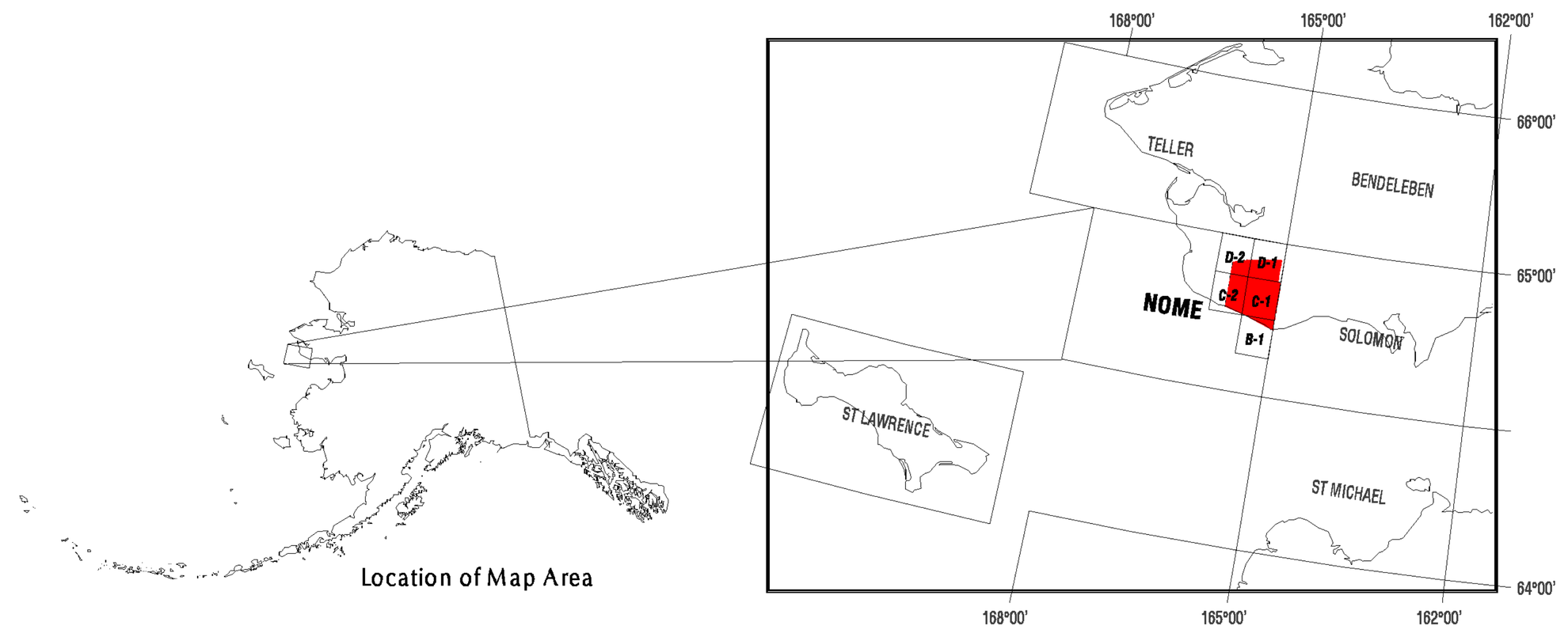
The DIGHEMV EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial coil-pairs operated at 900 and 5000 Hz while three horizontal coplanar coil-pairs operated at 900, 7200, and 56,000 Hz. EM data were sampled at 0.1 second intervals. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. Resistivity is generated from the inphase and quadrature component of the coplanar 7200 Hz using the pseudo-layer half space model.

LOCATION MAP



SURVEY HISTORY

This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys, and WGM, Mining and Geological Consultants, Inc. Airborne geophysical data for area 3 was acquired by Dighem Surveys & Processing, Inc. in 1993. The data for areas 1 and 2 were provided by Bering Straights Native Corporation. Other products from this survey are available from the Alaska Division of Geologic & Geophysical Surveys, 794 University Ave., Suite 200, Fairbanks, Alaska, 99709.



Location of Map Area

Division of Geological and Geophysical Surveys
Geologic Data Modeling System

Map projection: Universal Transverse Mercator

900 Hz COPLANAR RESISTIVITY OF THE NOME MINING DISTRICT

1994

July 15, 1994

S. Davidson
/files2/geophys/pdf/nomres90.aml